SPECIFICATION FOR

5000 CFM PORTABLE DEHUMIDIFIER ASSEMBLY

1. **SCOPE** - This specification contains the requirements for a portable, skid mounted, self-contained dehumidifier assembly supplied complete and ready for use. The portable dehumidifier assembly will be used as a process environment conditioning system for shipboard abrasive blast and paint operations.

2. APPLICABLE DOCUMENTS

2.1 **GENERAL** - The documents listed in this section are specified in sections 3 and 4 of this specification. This section does not include documents cited in other sections of this specification or recommended for additional information or as examples. While every effort has been made to ensure the completeness of this list, document users are cautioned that they must meet all specified requirements of documents cited in sections 3 and 4 of this specification, whether or not they are listed.

2.2 **GOVERNMENT DOCUMENTS**

2.2.1 **Specification, standards, and handbooks** -The following specifications, standards, and handbooks form a part of this document to the extent specified herein. Unless otherwise specified, the issues of these documents are those cited in the solicitation or contract.

CODE OF FEDERAL REGULATIONS (CFR)

29 CFR 1910	Occupational Safety and Health Standards
29 CFR 1915	Occupational Safety and Health Standards for Shipyard Employment

(Information is available online at: www.gpoaccess.gov)

FEDERAL STANDARDS

Federal Standard 313D	Material Safety Data, Transportation Data and Disposal Data for Hazardous Materials Furnished to Government Activities

(Copies available online at http://assist.daps.dla.mil/quicksearch/)

2.2.2 **Other Government documents, drawings, and publications** - The following other Government documents, drawings, and publications form a part of this document to the extent specified herein. Unless otherwise specified, the issues of documents are those cited in the solicitation or contract.

PUGET SOUND NAVAL SHIPYARD & INTERMEDIATE MAINTENANCE FACILITY (PSNS & IMF) BREMERTON SITE

PSNS & IMF P5100 (14)	Visitor and Contractor Handbook

(Request for copies should be addressed to Puget Sound Naval Shipyard & Intermediate Maintenance Facility, Code 980.2, 1400 Farragut Avenue Bremerton, WA 98314-5000)

2.3 **NON-GOVERNMENT PUBLICATIONS** - The following documents form a part of this document to the extent specified herein. Unless otherwise specified, the issues of documents are those cited in the solicitation or contract.

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

NFPA 70	National Electric Code (NEC)
NFPA 79	Electrical Standards for Industrial Machinery

(Information is available online at: www.nfpa.org)

NATIONAL ELECTRICAL MANUFACTURERS' ASSOCIATION (NEMA)

NEMA ICS-1	Industrial Controls and Systems General Requirements
NEMA MG-1	Motors and Generators Revision 1

(Copies available at: http://www.nema.org/stds/ or National Electrical Manufacturers Association, 1300 North 17th Street, Suite 1752, Rosslyn, VA 22209)

INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS (IEEE)

IEEE STD 841-2009	Standard for Petroleum and Chemical Industry-Premium-Efficiency, Severe-Duty, Totally Enclosed Fan-Cooled (TEFC) Squirrel Cage Induction Motors-Up to and Including 370 kW (500 hp)

(Information is available at http://ieeexplore.ieee.org/xpl/standards.jsp)

AMERICAN NATIONAL STANDARDS INSTITUTE, INC. (ANSI)

ANSI Z535.4	Product Safety Signs and Labels

(Copies available at: http://webstore.ansi.org or ANSI Attn: Customer Service Department, 25 W 43rd Street, 4th Floor, New York, NY 10036)

AMERICAN WELDING SOCIETY (AWS)

AWS D1.1 Structural Welding Code Steel

(Application for copies should be addressed to the American Welding Society, 550550 N.W. LeJeune Road, Miami, Florida 33126)

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM A123	Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products
ASTM D2201	Standard Practice for Preparation of Zinc-Coated and Zinc-Alloy-Coated Steel Panels for Testing Paint and Related Coating Products
ASTM E477	Standard Test Method for Laboratory Measurements of Acoustical and Airflow Performance of Duct Line Materials and Prefabricated Silencers

(Application for copies should be addressed to the American Society For Testing Materials, 1916 Race St., Philadelphia, PA 19103)

SOCIETY OF PROTECTIVE COATINGS (SSPC)

SSPC-SP1 Surface Preparation Specification No. 1
SSPC-SP10 Near-White Metal Blast Cleaning

(Additional information is available at: http://www.sspc.org/)

2.4 **ORDER OF PRECEDENCE -** Unless otherwise noted herein or in the contract, in the event of a conflict between the text of this document and the references cited herein, the text of this document takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

3. REQUIREMENTS

3.1 **General Description of System** - The portable dehumidifier assembly shall be designed for continuous operation and reliable performance in the specified environment. The unit shall be of the solid desiccant, noncycling sorption type, with a one-piece (monolithic) desiccant wheel, and shall include a desiccant wheel drive system, processing fan, desiccant reactivation heater(s) and fan, and an electrical control panel; all skid mounted within a rigid structural frame.

3.2 **Conditions of Service and Performance** - The following service and operational conditions shall apply to the equipment delivered under this specification.

3.2.1 **Operating Environment** - The proposed system will be operated in a heavy industrial environment and shall operate continuously over an extended period of time with minimal maintenance and upkeep. The unit shall be suitable for operation in an outdoor marine industrial environment, at variable ambient temperatures of -10°F to +104°F, with humidities of up to 100%, in a salt and dust laden atmosphere, and wind driven rain, sleet and snow.

3.2.2 **Size and Weight Limitations** - The size of the unit shall be kept as small as practicable. The overall dimensions, including the skid base and framework, shall not exceed 7.0 feet wide x 15.0 feet long x 8.0 feet high. No portion of the equipment or enclosure shall extend beyond these dimensions. The total weight of the unit shall not exceed 5,000 pounds.

3.3 **General Equipment Requirements**

3.3.1 **Response To Request** - As a part of the response to this request, descriptive literature shall be furnished in sufficient detail to show that the proposed design will meet these specifications. Vendor submittals shall include brochures of the model being submitted, assembly sketches with critical dimensions, sketches (with dimensions) of all tooling provided, statements of compliance or exceptions to the specification, and performance statements with special attention to the key performance criteria stated herein.

3.3.2 **New Developments** - If, during the contract period, any new developments are generated that would improve the efficiency, accuracy or productivity of the machine and its related equipment or would decrease its operation costs, the contractor shall immediately notify the Contracting Officer, in order that the new developments may, at the Government's option, be included in the equipment being purchased herein. All reports of such developments shall be addressed to the Contracting Officer.

3.3.3 **Maintainability** - The equipment shall be designed and constructed to permit maintenance personnel to service the equipment easily and effectively using a minimal number of tools. The contractor shall provide any special tools required to service the unit. The equipment shall have access covers, as necessary, to facilitate inspection, cleaning and repair or replacement of internal parts.

3.3.4 **Standard, Off The Shelf Components** – All materials and parts comprising the system shall be new, of current design and manufacture, and shall not have been in prior service except as required for factory testing. Standard, off the shelf components with proven reliability shall be used wherever possible to increase performance reliability and reduce costs. The equipment shall be one of the manufacturer's current production models which, on the day this solicitation is issued, has been designed, engineered and sold, or is being offered for sale through advertisements or manufacturer's published catalogs or brochures. Products such as a prototype unit, pre-production model, or experimental unit DO NOT qualify as meeting this requirement. The equipment shall be complete, so that when connected to the utilities identified herein, it can be used for the function for which it is designed and constructed.

3.3.5 **Personnel Safety and Health Requirements** - All machine parts, components, mechanisms, and assemblies furnished on the unit shall comply with all specific requirements of "OSHA Safety and Health Standard (29CFR1910), General Industry" that are applicable to the equipment itself. Covers, platforms, guard rails, belt guards, and safety devices shall be provided for all parts of the equipment that present a safety hazard. The safety

devices shall not interfere with the operation or maintenance of the equipment. The safety devices shall be removable to facilitate inspection, maintenance, and repair of the part. Additional safety and health requirements shall be as specified in other paragraphs of this specification.

3.3.6 **NRTL Listing or NRTL Field Inspection and Approval** - The dehumidifier shall be listed or approved by one of the following methods:

3.3.6.1 Nationally Recognized Testing Laboratory (NRTL) Listing and Labeling- The equipment specified herein shall be listed and labeled by an Occupational Safety & Health Administration (OSHA) approved Nationally Recognized Testing Laboratory. Test data reports shall be furnished for review.

3.3.6.2 Nationally Recognized Testing Laboratory (NRTL) Field Inspection - The equipment specified herein shall be field inspected and approved by an Occupational Safety & Health Administration (OSHA) approved Nationally Recognized Testing Laboratory. Test data reports shall be furnished for review.

3.3.7 **Safety Devices** - All machine parts, components, mechanisms, and assemblies furnished on the unit shall comply with all specific requirements of "OSHA Safety and Health Standard (29 CFR 1910), General Industry" that are applicable to the equipment itself. Covers, platforms, guard rails, belt guards, and other safety devices shall be provided for all parts of the equipment that present a safety hazard. The safety devices shall prevent unintentional contact with the guarded part. The safety devices shall not interfere with the operation or maintenance of the equipment. The safety devices shall be removable to facilitate inspection, maintenance and repair of the part. Access Ladders, Platforms, and Safety Rails: For all equipment that requires preventative maintenance and servicing, provide access ladders, platforms, safety rails with toe boards and devices as required to meet 29 CFR 1910 Subpart D to allow workers to perform the maintenance without the use of personal fall protection.

3.3.8 **Energy Isolating Devices** - The equipment shall be provided with energy isolation devices (e.g. power switches, safety devices, circuit breakers, valves, etc.) that protect personnel from the release of hazardous energy. Hazardous energy includes electrical, mechanical, hydraulic, pneumatic, gravity, or other energy that could harm employees involved in servicing or maintenance of the equipment. The devices shall be installed as the first energy control device on all major components of the system such that the component can be isolated at the component level. The devices shall be designed and manufactured such that they can be padlocked in the user-selected position (ON or OFF, OPEN or CLOSED) to prevent inadvertent or unauthorized change.

3.3.9 **Audible Noise Levels** - During normal operation, the dehumidifier assembly shall not produce noise levels greater than 84 dB(A) as measured on the "A" scale and 92 dB(C) as measured on the "C"at any point three feet from the unit using a standard sound level meter at slow response (29 CFR 1910.95, Occupational Noise Exposure Standard). See paragraph 4.4.3 for noise level testing

3.3.10 **Electrical** - The equipment delivered and all accessory parts shall operate from a single source of primary power (460 VAC, three phase, 60 Hz).

3.3.10.1 All Electrical Components including motors, starters, relays, switches, and wiring shall conform to and be located in accordance with the applicable NFPA, NEMA, and ANSI standards for the intended application.

3.3.10.2 Grounding - All exposed, non-current carrying metal parts on the equipment shall be maintained at common, zero ground potential. None of the primary circuits in the equipment shall be connected to ground. A grounding stud/lug on the equipment shall provide a means for grounding the equipment.

3.3.10.3 Overcurrent Protection - All electrical components shall be fused or circuit breaker protected in each phase conductor for AC circuits and both DC circuit conductors. Overloads, fuses and circuit breakers shall be coordinated for maximum component protection and minimum circuit disruption.

3.3.10.4 Motors - All electric motors shall be the totally enclosed, fan cooled style, rated for continuous duty, and equipped with ball bearings. Bearings shall be of the sealed for life and permanently lubricated type. Motors shall be in accordance with NEMA MG-1 requirements.

3.3.11 **Bearings** - All bearings contained in the equipment and the entire system must be United States (U.S.) or Canadian manufactured. If they are not U.S. or Canadian manufactured bearings, the vendor must provide a list of exact U.S. or Canadian made equivalent bearings that can be used for replacement of each bearing within this equipment or system.

3.3.12 **Environmental Protection** - The unit shall be designed and constructed so that during operation, service, transportation and storage conditions described herein, including final disposal, the equipment will comply with all applicable Environmental Protection Agency (EPA) and Occupational Safety and Health Agency (OSHA). The equipment described herein shall not contain or emit material hazardous to the ecological system as prescribed by federal, state, and local statutes in effect at the point of installation.

3.3.13 **Hazardous Material Exclusions** - Materials being provided as part of the equipment shall be free of known hazardous materials. Definitions of hazardous materials are specified in the latest version, including revisions adopted during the term of the contract, of Federal Standard No. 313.

3.3.13.1 Notwithstanding any other hazardous material usage permitted in this contract, radioactive materials or instruments capable of producing ionizing radiation as well as materials which contain asbestos, mercury, cadmium, lithium, methylene chloride, lead (=or>0.06%), or polychlorinated biphenyls (PCB's) are prohibited.

3.3.14 **Painting** - Exterior surfaces of all components shall be either hot dip galvanized or blasted and painted with federal standard green (14187) in accordance with the following requirements.

3.3.14.1 General requirements.

(A) Components shall be prepared and coated prior to final assembly.

(B) The exterior and interior of all enclosures and components shall be primed and painted unless they are fabricated of stainless steel, fiberglass, plastic, or carbon steel hot dip galvanized per ASTM A 123.

(C) Coatings shall be applied in accordance with the manufacturer's instructions.

3.3.14.2 Preparation.

(A) Prior to galvanizing or blasting, weld spatter and other surface imperfections shall be removed by grinding.

(B) Components to be coated shall be cleaned to SSPC-SP1 (solvent cleaning) prior to abrasive blasting. This step assures the removal of oil, salt, and other surface contamination which can prevent proper paint adhesion in spite of subsequent abrasive blasting.

(C) All sides of components shall be abrasive blasted to SSPC-SP10, (Steel Structures Painting Council-Surface Preparation Standard number 10, "Near White Blast"), with a surface profile of 1.5 to 2.5 mils.

3.3.15 **Safety Signs and Labels** - "Caution" or "Warning" stainless steel plates and labels in accordance with ANSI Z535.4 shall be securely attached to the equipment in visible locations, with any safety precautions to be observed by the operator or maintenance personnel permanently marked on the plates.

3.3.16 **Identification Plate** – Stainless steel identification plates shall be furnished with the equipment. A nameplate shall be affixed to each major component of the system showing the manufacturer's name, equipment model, year of manufacture, contract number, and any other pertinent information for identifying the part as a unique component of the system.

3.3.17 **PCB Label Plate** - A stainless steel label plate containing the PCB Certification information shall be permanently affixed to the equipment in the vicinity of the manufacturer's identification plate.

3.3.18 **Lift Sketch** - The contractor shall provide a stainless steel lift sketch furnished on the equipment that shall identify the following (the lift sketch shall be reviewed by the government prior installation on the equipment) :

a. The weight of the load

b. The location of the center of gravity
c. The minimum capacity and length of the slings
d. The minimum capacity of other standard lifting gear
e. The attachment (lifting) points for each load

3.4 **Requirement for dehumidifier** - The portable dehumidifier assembly specified herein shall include, but is not limited to the following components, attachments, and accessories.

3.4.1 **Desiccant Wheel** - The desiccant wheel design shall employ a honeycomb type structure, with the desiccant impregnation of the wheel of such quality that the drying/reactivation process can be efficiently performed while the dehumidifier unit is in continuous operation. Under normal operating conditions, the desiccant shall have a service life of 20,000 hours (minimum) without replenishment or replacement.

3.4.2 **Processing Fan** - The processing fan shall be electric motor driven, and shall be rated for 5,000 SCFM (minimum) at 5" External static pressure.

3.4.3 **Processing Capacity** - The dehumidifier shall maintain a conditioned airflow over the entire range of 2,500 to 5,000 SCFM (minimum). The minimum moisture removal rate at 5,000 SCFM shall be 130 pounds per hour at 80°F and 60% relative humidity

3.4.4 **Desiccant Reactivation** - The desiccant wheel shall be electric motor driven to continuously rotate, thus permitting simultaneous air processing and desiccant reactivation. An electric motor driven fan and electric heater(s) shall provide forced hot air for desiccant reactivation. An electronic proportional controller shall be provided to automatically regulate the operation of the reactivation heaters and maintain the required temperature for optimum efficiency.

3.4.5 **Filters** - The unit shall be supplied with permanent, washable filters for the processing and reactivation input air systems.

3.4.6 **Cooling Coil** - The dehumidifier shall have a cooling coil that is compatible with saltwater (190 psig at 60 degrees F) for cooling the process air after it passes through the desiccant.

3.4.6.1 Performance:

3.4.6.1.1 5000 SCFM air entering the unit at a temperature of 127°F Dry Bulb / 15°F Wet Bulb.

3.4.6.1.2 The air leaving the unit shall not exceed 69°F Dry Bulb / 15°F Wet Bulb.

3.4.6.1.3 Maximum air pressure drop across the unit shall be 1" w.g.

3.4.6.1.4 Air face velocity no greater than 500 fpm

3.4.6.2 Coil Construction:

- **a.** Fin construction shall be aluminum
- **b.** Tubes: shall be ASTM B111, 90/10 copper nickel.
- **c.** Headers shall be constructed of copper.
- **d.** A stainless steel drain pan shall be provided.
- **e.** The coil frame shall be constructed of stainless steel.
- **f.** Saltwater supply and return connections shall be 2 inch NPT(minimum), oriented with the pipe axis approximately horizontal.
- **g.** Header design shall permit inserting a long rod or brush into each tube to remove deposits.
- **h.** Coils shall be pitched and drainable. A valve drain and vent shall be provided to allow the coils and headers to be drained.

3.4.7 **Heating Coil** - The dehumidifier shall have an after heating coil that is compatible with saturated steam (150 psig) for heating the process air after it passes through the desiccant.

3.4.7.1 Coil Construction:

a. The coil shall be fabricated with weld steel coils with corrosion coating on the coils for protection.
b. The supply/return connections shall be 1 ½"inch NPT (minimum).
c. A low point drain shall be provided.
d. Design pressure: 150 psi saturated steam.
e. Discharge temperature shall be 100°F to 120°F.

3.4.8 **Enclosure** - The enclosure shall have access panels on both sides of the unit for inspection and servicing without disconnecting ducting or electrical wiring. An observation window shall be provided to permit visual inspection of the desiccant wheel while the unit is in operation.

3.4.8.1 The unit shall be equipped with static pressure seals to separate process and reactivation airstreams and minimize detrimental leakage of air or moisture with pressure differentials up to 8 inches of water gauge.

3.4.8.2 The dehumidifier shall have a hooded roof to prevent water from accumulating atop the equipment.

3.4.9 **Inlet/Outlet Connection** - The unit shall be supplied with processing and reactivation outlet dampers, and shall be configured for rectangular, flange-connected ducting. Process and reactivation air inlet connections shall be fitted with weatherhoods to prevent rainwater intrusion.

3.4.9.1 Outlet Flange - The outlet connections shall be 18" round with flanged adapter as shown in enclosure 1.

3.4.10 **Main Control Panel** - The unit shall be supplied with a main control panel and quarter turn latches (no keyed latches) which shall include the following:

3.4.10.1 A NEMA 4X, UL labeled enclosure with a fused main disconnect switch or circuit breaker for single point electrical disconnect to the entire system.

3.4.10.2 Motor starter(s), overload protection devices, off/on/automatic operation switch control relays, and any additional fault and indicating lights. Auxiliary instrumentation to include an hour meter to indicate cumulative run time.

3.4.11 **Main Disconnect Panel (separate from main control panel)** - A UL 98 NEMA 4X motor controller disconnecting means shall be included to provide isolation of all electrical energy to the main control panel. This disconnecting means shall be lockable in the open circuit (off) position.

3.4.12 **Structural** - For portability, the entire unit shall be mounted on a single heavy-duty skid base. The skid base shall provide adequate bracing and support to permit placing the entire assembly on uneven surfaces without causing equipment damage, distortion or overstress. The base and associated framework shall be gusseted and cross braced as necessary to withstand the stresses, vibration and shock associated with rough handling and transport of the unit by overhead crane or flatbed truck over rough surfaces. The skid base and framework shall be welded in accordance with ANSI/AWS D1.1.

3.4.12.1 The dehumidifier structure shall be lifted with four lifting attachments with a single point crane hook without a spreader bar attachment.

3.4.12.2 The structure shall be lifted by four pendant of equal length. Chain falls and other leveling devices will not be used.

3.4.13 **Lifting and Handling** - The skid shall be equipped with four lifting pads welded into the structure. The allowable bending strength shall be based upon 1/3 of the allowable yield strength or 1/5 of the allowable ultimate strength, whichever is the most conservative, of the lifting attachment material.

3.4.13.1 The shear strength shall be equal to 0.58 times the allowable design bending strength defined above.

3.4.13.2 The bearing strength shall be equal to 0.3 times the ultimate strength of the lifting attachment material.

3.4.13.3 The lifting attachments shall be sized based on actual weights plus 10% for unexpected growth in the weight of the load. The resulting value shall be further increased to reflect the loads induced by the angle the slings make to the plane the lifting attachments lie on. The attachments shall be oriented so the slings shall not pull out of the plane of the individual lifting attachment by more than 5° unless they are designed to withstand the resulting side load. The attachments shall be arranged so the load is lifted relatively level. If the equipment is intended to be stackable, provisions in the design shall be made to prevent damage to the lift points of the lower item if the upper item is not landed accurately or symmetrically. In addition, the individual loads for each point shall be calculated based on the configuration of the rigged equipment and the location of its center of gravity. These final values shall be referred to as the Working Load Limit (WLL).

3.4.13.4 When installing three, four, or more lifting attachments, only two shall be assumed to carry the load unless a spreader or strongback is used. The use of spreaders or strongbacks shall be kept to a minimum, but if they are deemed necessary, a lift sketch detailing the required spread, capacity and orientation of that gear shall be provided for review at the time of the submittal of the equipment design.

3.4.13.5 The structure supporting the lifting attachments shall be designed to sustain the various lateral loads imparted by the arrangement of the lifting attachments and the induced sling angle loads based on a buckling analysis per the American Institute of Steel Construction (AISC), Allowable Stress Design.

3.4.13.6 The lifting attachments are required to withstand a load test of 200% (+5%-0%) of the Working Load Limit (WLL) for 2 minutes. Acceptance criteria shall be: No bending, cracking, or permanent deformation of the lifting attachments or associated structure. The contractor's certified representative will perform the load testing plus a pre- and post-load VT per the inspection requirements of American Welding Society (AWS) D1.1 and submit documentation of the satisfactory results of all the various tests. The lifting attachments shall be labeled with the WLL and the test date.

3.4.13.7 All calculations required for the design of the lift points shall be performed by a Professional Engineer, and shall be provided for review at the time of the submittal of the equipment design.

3.4.14 **Forklift Pockets** - The base shall also have fully enclosed forklift slots for handling with a forklift truck. The forklift slots shall be 12-inches wide by 6 -inches high rectangular tube +/- 1/2-inch on 60 inch centerline.

3.5 **Technical Data to be Provided**

3.5.1 **Operator / Maintenance Manuals** - The equipment shall be furnished with five (5) copies of the manufacturer's standard Operation and Maintenance Manual(s) and one copy on CD-ROM disk(s) for each order placed. All information contained in the manual(s) shall reflect the unit and its components in the "as built" configuration.

a. All instructions and illustrations necessary for proper operation of the equipment.
b. Instructions, diagrams, and electrical/electronic schematics required to troubleshoot and repair the unit in the event of malfunction or breakdown.
c. Complete parts list(s) cross indexed to indicate part application by circuit symbol. Procurement information shall be provided for all replacement components.

3.5.2 **Lifting Attachment Certification** - Concurrent with equipment delivery, the contractor shall supply a letter of certification stating the lifting pads meet the specified design criteria.

3.5.3 **NRTL Listing or NRTL Field Inspection and Approval Compliance Statement** - The contractor shall provide signed, written certification of compliance to the requirements of Section 3.3.6- NRTL listing or NRTL field inspection and approval. Failure to provide this certification will delay acceptance of the equipment, and could result in rejection for failure to comply with the terms of the contract.

3.5.4 **PCB Certification** - The Contractor shall provide written certification from the manufacturer that the equipment contains no detectable PCBs (less than two (2) part-per-million (ppm)). The certification shall be on manufacturer's letterhead, and signed by a company official who is empowered to provide same. A label plate containing the PCB Certification information, shall be permanently affixed to the equipment in the vicinity of the manufacturer's identification plate. The certification shall be engraved or etched on wear and corrosion resistant material.

3.5.5 **Warranty** - Supplies and services furnished shall be covered by warranty from defects in design, materials and workmanship. The warranty shall be the manufacturer's standard commercial warranty, which shall conform to all requirements of the contract. Acceptance of the manufacturer's standard commercial warranty shall not minimize the rights of the government under clauses in the contract, and in any conflict that arises between the terms and conditions of the contract and manufacturer's warranty, the terms and conditions of the contract shall take precedence. The warranty period shall commence from the date of acceptance as cited on a properly executed DD Form 250 per paragraph 4.4.5.

3.5.6 **Training** - Provide onsite training within 20 working after satisfactory completion of acceptance testing of the system, the services of a qualified representative(s) shall be provided for specialized training to familiarize receiving activity personnel with the equipment and to help ensure reliable performance and maximum service life, during normal usage. Training sessions shall be provided separately for each group/type of government personnel. The training shall apply to personnel as follows:

3.5.6.1 Operator Personnel – Training shall be provided for 5 operator personnel at a journeyman mechanic level for a period of 4-hours. This training shall include preparation of equipment for operation and actual, safe operation of the equipment.

3.5.6.2 Maintenance Personnel (Mechanical/Pneumatic) - Training shall be provided for 3 mechanical maintenance personnel at a journeyman mechanic level for a period of 2-hour. This training shall include trouble-shooting and methods of correction if the equipment malfunctions, with particular emphasis on minimizing equipment down time.

3.5.6.3 Maintenance Personnel (Electrical/Electronic) - Training shall be provided for 3 electrical/electronic maintenance personnel at a journeyman mechanic level for a period of 2-hours. This training, with respect to equipment/controls/drives/interface units and related components, shall include trouble-shooting and methods of correction should equipment malfunction, with emphasis on minimizing equipment down time.

3.5.6.4 Training shall be scheduled and tailored by mutual agreement between the Contractor and the receiving activity.

3.5.6.5 The entire contractor cost of providing the training (including travel, per diem, etc.) shall be covered by this contract.

3.5.7 **Performance Data** – Test performance report shall be supplied to ensure the basic performance test is performed and the equipment is functioning properly. Items to be tested but not limited to: FLA, heater and motor(s) amp draw on each leg, DP reading, process air/reactivation air inlet temperature, process air/reactivation air inlet humidity, process air/reactivation air outlet temperature, process air/reactivation air volume and process air/reactivation air outlet humidity.

4. QUALITY ASSURANCE PROVISIONS

4.1 **Responsibility for Inspection** - The Contractor shall be responsible for the performance of all inspection requirements (examinations and tests) as specified herein. The Contractor may use his own facility or any other facility suitable for the performance of the inspection requirements specified herein. The Government reserves the right to perform any of the inspections set forth in this specification, where such inspections are deemed necessary to assure supplies and services conform to the prescribed requirements.

4.2 **Responsibility for Compliance** - All items shall meet all requirements of sections 3 and 5. The inspection(s) set forth in this specification shall become part of the contractor's overall inspection system or quality program. The absence of any inspection requirements in the specification shall not relieve the contractor of the responsibility of assuring that all products or supplies submitted to the Government for acceptance comply with all requirements of the contract. Sampling inspections, as part of manufacturing operations, is an acceptable practice to ascertain conformance to requirements; however, this does not authorize submission of known defective material, either indicated or actual, nor does it commit the Government to accept defective material.

4.3 **Basic Performance Tests** - Basic performance tests shall be conducted on the primary equipment and all associated equipment to the extent practicable, to demonstrate functionality. The tests may be performed by the Manufacturer, either by personnel of their service organization directly, or by an independent testing agency.

4.3.1 **At the option of the government** - Tests may be witnessed by a representative of Puget Sound Naval Shipyard or shall have the option of sending their technical representative(s) to witness the tests. The Contractor shall schedule and coordinate the test at origin. At least fifteen days prior to the test, the Contractor shall notify the Shipyard Point Of Contact of the scheduled date, time, and location of the test.

4.4 **Inspection At Destination**

4.4.1 **Initial Test And Grooming** - The equipment delivered with the system shall by inspected by the Government for mechanical integrity as follows:

- All welds shall be inspected for integrity and appearance.
- Surfaces shall be examined for sharp edges and burrs.
- Fasteners shall be checked for tightness.
- Paint will be checked for flaking and blistering.
- The fit of parts shall be observed, with particular reference to the interchangeability of those, which are likely to require replacement.
- Electrical requirements examined for compliance to the National Electrical Code, (NFPA 70 and NFPA 79).

Note: Faults will be duly recorded and presented to the contractor for rectification.

4.4.2 **Operational Tests** - Upon satisfactory completion of the tests above, the equipment shall be setup by the government for an operational test. The unit shall be exercised to the extent necessary to prove proper operation in accordance with specification requirements. The system shall function, without failure, for the duration of this test period. If a failure occurs during operational testing, the contractor shall be duly notified for rectification and upon repair the tests shall be restarted from the first test. Three failures without completion of the operational tests shall be considered cause for rejection of the system. For the purpose of this test, a "failure" is defined as any equipment malfunction, which requires remedial action to restore the system to full operation in accordance with contract specifications.

4.4.3 **Noise Level Test** - The Government Industrial Health and Safety Department shall conduct a noise level survey using a certified sound level-measuring instrument. Four random measurements shall be taken at the operator's work position(s) and at each side and end of the equipment. For each measurement, the microphone shall be located on a straight line which is perpendicular to the surface/corner being measured and at a height corresponding to the point of the highest noise level emitted from the surface/corner at the herein specified location or distance from the equipment. Each sample shall be 84 dB (A scale) or less and a 92 dB (C scale) or less.

4.4.4 **Provisions for repair and test** - In the event of a test failure, the contractor, at their discretion, may elect to correct the failed condition and request a retest of the system.

4.4.5 **Final Acceptance** - Upon satisfactory completion of testing of the equipment (paragraph 4.4.2), an authorized Government Representative shall sign and forward the acceptance document(s) (DD Form 250) to the paying office.

5. DELIVERY

5.1 **Notification** - The receiving activity shall be notified no less then 48 hours prior to the arrival at the site of the contractors installation personnel.

5.2 **Shipment** - Shipment of materials shall be coordinated with site preparation and installation. Material transportation from the manufacturer's facility to the work site shall be the responsibility of the contractor. Limited secured storage areas at the facility will not permit the Government to store material for extended periods of time. Early shipment of materials, without the permission of the receiving activity shall be refused.

5.3 **Packing Material** - The use of shredded paper, whether newspaper, office scrap, computer sheets, or wax paper, in packing material for shipment to Navy activities, is prohibited.

5.4 **Delivery** - The equipment shall be delivered to:

Puget Sound Naval Shipyard
1400 Farragut Avenue
Bremerton, WA. 98314-5001

6. ADDITIONAL REQUIREMENTS

6.1 GENERAL SECURITY REQUIREMENTS

6.1.1 **Security Regulations** - The contractor shall comply with security regulations imposed by the installation Commander and/or agency occupying the space where the work/training is to be performed, which includes obtaining any necessary personnel security clearances and vehicle passes.

6.2 ADMITTANCE TO THE WORK SITE

6.2.1 **Access Badges (Controlled Industrial Area)** – Upon contract award, employees or representatives of the Contractor who require access to the Puget Sound Naval Shipyard Controlled Industrial Area (CIA) and shall be admitted to the work site only after they have been issued a Security Pass/ID Badge.

NOTICE: Persons who are currently on probation or parole from a felony conviction cannot qualify for a Security Pass/ID Badge and will be denied access to the Shipyard.

6.2.1.1 Contractor personnel requiring access badges for unescorted entry into the CIA will be required to provide personal background information to the extent necessary to obtain a Security Pass/ID Badge.

6.2.1.2 A request for Visitor Badge, PSNS Form 5512/127, completed by the sponsor (typically the Contracting Officer or the Receiving Activity Point of Contact) and submitted by the sponsor (Receiving Activity Point of Contact) to the Pass and I.D. Office, at least five (5) business days before the badges are needed.

6.2.1.3 The Government will issue badges without charge.

6.2.1.4 Contractors, their subcontractors and vendors requesting access to the CIA will be required to view an orientation videotape lasting approximately 30 minutes prior to receiving a badge.

6.2.1.5 Contractor shall allow approximately two (2) hours for each employee to acquire a badge.

6.2.1.6 Each employee shall visibly display/wear the Government issued badge chest high over the front of their outermost clothing.

6.2.1.7 It shall be the Contractor's responsibility to collect and account for all Security Pass/I.D. Badges issued to their personnel upon termination of any employee, expiration of the badge, completion of the contract, or when access is no longer required. Badges, passes and permits shall be returned to the Pass and I.D. Office immediately.

6.2.2 **Required Documentation** - Contractors working within the CIA are required to be United States citizens and must show proof of citizenship prior to receiving a badge. Acceptable forms of proof are:

Original Birth Certificate

Original Department of State Birth Certificate

Certificate of Person Born Abroad

Original Naturalization Certificate

Valid United States Passport

6.2.3 NOTE: Proof of U.S. citizenship shall be hand carried by the employee to the Pass and I. D. Office located in Bldg. 981, when picking up the badge.

6.2.4 **Foreign Nationals or Affiliations** - Foreign Nationals (non U.S. Citizens) or persons affiliated with, or employed by, a foreign, or foreign owned company will not be granted access to Puget Sound Naval Shipyard CIA without prior written approval from Commander, Naval Sea Systems Command (NAVSEA).

6.2.5 The Government will provide a standard background information data form for obtaining NAVSEA approval of foreign nationals. This form can be obtained from the Contracting Officer or the Receiving Activity Point of Contact.

6.2.6

6.2.7 Vehicle Passes

6.2.8 Contractors will be allowed to bring company vehicles into the CIA based upon the nature of their work as determined by the Commanding Officer in conjunction with the Industrial Security Officer.

6.2.9 Forms for obtaining vehicle passes and permits may be obtained from the Receiving Activity Point of Contact.

6.2.10 Each contractor, subcontractor and vendor vehicle shall be registered with the Pass and I.D. Office located in Bldg. 981.

6.2.11 Contractors shall clearly display an authorized company sign or logo on their vehicle.

6.2.12 Contractor vehicles are not allowed to enter the CIA with more than three (3) people onboard.

6.2.13 After contract award, the Contracting Officer will issue a memorandum that lists the vehicles a contractor will be allowed to bring into the CIA.

6.2.14 Each permit will include the company name, license plate number and expiration date.

6.2.15 CIA permits will be issued to each authorized vehicle by license number.

6.2.16 Each contractor, subcontractor and vendor shall provide the state registration or a photocopy and proof of insurance documents of each approved vehicle to the Pass and I.D. Office where one of the following Vehicle Permits will be issued and the purpose for each type of permit.

6.2.17 Lay-down Permit - A permit that authorizes the vehicle to be brought in to transport tools, parts, or materials to/from the site or function as a work platform. Vehicles with Lay-down permits are kept at the negotiated job site when not traveling to/from the gate.

6.2.18 Load/Unload Permit - A permit that authorizes the vehicle to be brought in to drop off tools, equipment and machinery (which cannot be hand carried) then is taken out of the CIA. Vehicles with Load/Unload Permits shall not be left unattended at the job site for more than 30 minutes.

6.2.19 Service Permit - A permit that authorizes the vehicle to be brought in and used as a mobile work platform because it contains tools, parts, materials, supplies and/or fabrication equipment. Vehicles with Service Permits allow the vehicle to be used at job sites throughout the CIA where no negotiated lay-down area exists.

6.2.20 RESTRICTIONS

6.2.21 Parking

6.2.22 Vehicles and equipment- Vehicles and equipment required by the Contractor to complete this contract must be registered with Shipyard Security.

6.2.23 Contractor vehicles must be marked on the outside with the company name or logo or both. Failure to comply will result in ticketing and/or loss of vehicle privileges.

6.2.24 Regular Working Hours - All work is to be performed during Puget Sound Naval Shipyard & Intermediate Maintenance Facility Bremerton Site's regular work hours from 7:30 a.m. to 4:00 p.m., Monday through Friday except for Federal Holidays.

6.2.25 Restricted Colors - This Shipyard uses the colors magenta, yellow, red and blue to identify specially controlled materials. The Contractor is specifically prohibited from using magenta, yellow, red or blue colored plastic wrapping materials or bags, tape, or other covering materials.

6.2.26 Radio Restrictions - Operation of privately owned citizens band or amateur radio equipment (receive and transmit) within the geographic limits of Puget Sound Naval Shipyard is prohibited. All radio equipment installed in privately owned motor vehicles must be turned off upon entering any gate to the Government Activity.

6.2.27 Privately Owned Personal Computers And Cellular Telephones - The use of privately owned personal computers and cellular telephones by contractor personnel at Puget Sound Naval Shipyard is restricted. Contractors requiring such devices in the performance of this contract shall obtain a copy of the applicable form(s) from the Contracting Officer. The completed applicable form(s) shall be returned and routed for Government approval. The use of cell phones are not permitted at anytime while driving anywhere within the Government Activity.

6.2.28 Photography/Recording - Contractor personnel are prohibited from having photographic equipment (including cell phones and watches capable of taking pictures), tape recorders, zip drives, personal electronic management devices, or other recording devices in their possession while inside the Government Controlled Industrial Area (CIA).

6.2.29 Sanitation – Puget Sound Naval Shipyard & Intermediate Maintenance Facility (PSNS & IMF) prohibits its employees to consume food except in designated areas. Per the Code of Federal Regulations, 29 CFR 1910.141, Sanitation, employees may not eat or drink in regulated work areas or in other industrial work areas where toxic materials are present. Hardhats, gloves and any other regulated work clothing shall not be worn or placed in designated eating areas.

6.2.30 Smoking – Smoking is permitted in designated areas only.